

AMENDMENTS IN THE CLAIMS

1-5. (canceled)

6. (original) A method of measuring the amount of oxidative stress in an individual, comprising the steps of:

- (a) collecting tissue of interest from said individual;
- (b) measuring the amount of mitochondrial DNA damage in said tissue of interest;
- (c) determining the amount of DNA damage in a nuclear gene in said tissue of interest; and
- (d) comparing the amount of DNA damage per length of DNA between said mitochondrial DNA and said nuclear gene, wherein a greater amount of mitochondrial DNA damage per length of DNA than nuclear DNA damage per length of DNA is indicative of an increased amount of oxidative stress in said individual.

7. (original) The method of claim 6, wherein said nuclear gene is selected from the group consisting of the β -globin locus, transcriptionally active genes, and transcriptionally inactive genes.

8. (original) The method of claim 6, wherein said mitochondrial DNA damage and DNA damage to said nuclear gene is determined by quantitative PCR.

9. (original) The method of claim 6, wherein increased amounts of oxidative stress are predictive of atherogenesis, hypertension, diabetes mellitis, hypercholesterolemia, cigarette smoking, degenerative diseases of aging and cancer.

10. (original) The method of claim 6, wherein said mitochondrial DNA damage is assessed by a measurement selected from the group consisting of measurement of mitochondrial mRNA production, measurement of mitochondrial protein production, measurement of changes in mitochondrial oxidative phosphorylation and measurement of changes in mitochondrial ATP production

11-13. (canceled)